

STANDARD 6- AIR QUALITY

Air Quality Meets State Standards.

1) Characterization:

Air quality within the field office cannot be easily documented, since monitoring data has not been gathered for the most part, except for site-specific projects. Air quality regulations consist of the National Ambient Air Quality Standards (NAAQS) and the Prevention of Significant Deterioration (PSD) increments. The NAAQS limit the amount of specific pollutants allowed in the atmosphere. All BLM-administered lands are classified PSD Class II, which means that moderate, controlled growth can take place. However, adjacent to this field office is a high priority airshed for the Mt. Zirkel Wilderness Area.

In 1999, EPA issued regulations to address regional haze, which are visibility impaired areas caused by numerous sources located across a wide geographical range. Visibility impairment happens when light is scattered or absorbed by particles and gases in the atmosphere. It is most easily described as haze that obscures the clarity, color, texture, and form of what we see (NAQETR, 1999).

2) Issues and Key Questions:

Several different factors can greatly affect air quality within this analysis area, but most are unrelated to livestock grazing. Oil and gas development and coal mining produce the largest and most continuous amounts of pollutants in the air. The pollutants come directly from power plants and coal mine emissions, areas of production such as well heads in burn-off operations, and other associated activities. Vehicle traffic contributes pollutants through the combustion of fossil fuels. Where interstates or highways are present, more motor vehicle traffic will result in increased levels of these pollutants. In less developed areas, such as along two-tracks these levels of pollutants will be greatly reduced due to less traffic (pictures 97-1, 97-2). Oil and gas (and other uses) traffic along these dirt roads also affects air quality over the short term, especially during dry conditions. How can we reduce pollutants that enter the air at their source, and also address associated air quality issues such as dust abatement from vehicular travel?

Prescribed burns and wildfires affect air quality in a localized area for a short period of time. Prescribed burns are implemented in coordination with and permitted by the Wyoming Department of Environmental Quality. Most are planned in a way to minimize impacts to more-populated areas. Large-scale fires are becoming much more common due to decades of fire suppression. If fuel breaks aren't created occasionally by prior burned areas, could we be looking at larger wildfires with associated air quality issues?

Livestock grazing may slightly affect air quality within the field office by possibly reducing vegetative cover in certain areas, increasing areas of bare ground where trailing occurs, causing short-term dust pollution when herded or moving, and production of methane gas through digestion. Is the presence of livestock a serious concern with respect to air quality?

3) Current Conditions:

Overall air quality is good within the area, which is due in large part to the presence of reliable winds. According to a letter received from the Wyoming Department of Environmental Quality there are no air quality criteria pollutant non-attainment areas for either state or federal standards within the boundaries of the Rawlins Field Office. Lichens (an important air quality indicator) are prevalent throughout the assessment area and the field office.

Current annual average conditions range from 18-40 miles in the rural portions of the eastern United States to 35-90 miles in the rural western portions. On an average basis, they are estimated at approximately 80-90 miles in the east and up to 140 miles in the west (NAQETR, 1999). Three figures (1, 2, and 3) from this report document the clearest, middle, and haziest days across the country. On a local basis, visibility as

reported from the Rawlins airport is on average 60 miles. On days that are hazy due to drift smoke this visibility can be less than 10 miles.

Oil and gas development and the associated roads and traffic have impacts on local air quality. Some roads have been surfaced to reduce dust levels, but there is still much that should be done. In high development areas, roadside vegetation is caked with dirt, and in the winter the snow shows the movement of dirt particles. Dry soil conditions exacerbate the problem, so in the summer dust is increased. This not only affects air quality but also public safety, as visibility when traveling by vehicle can be severely hindered. In many cases headlights must be turned on to alert others of vehicles within the area.

Short-term impacts from prescribed burning and/or wildfires can also impact air quality. There are usually only a few prescribed burns in this area conducted mainly in the fall. The burns usually only take a few days to implement and generally require winds in the burn plan prescription. If they are close to communities, the burn plan tries to mitigate short-term impacts to air quality.

No large wildfires have burned in the local area, the largest has been less than 3,000 acres. The majority of wildfires are less than 10 acres. Therefore, local wildfires have as minimal an impact on air quality as do prescribed burns. However, large-scale fires in the Intermountain West can affect air quality within the area as drift smoke. Recent photographs show the impacts on air quality from catastrophic wildfires in Colorado in 2002. Depending on the fire season, these impacts can be short or long-term. In the case of 2002, several days have been unusually smoky due to large wildfires throughout the West and the lack of reliable prevailing winds (pictures 98-1 thru 98-6).

Depending on the type of grazing management implemented, number of animals, and habitat type, pollution from livestock presence varies. Season-long use and/or heavy use levels can increase bare ground, thereby increasing dust. In periods of drier climate conditions, dust created by livestock trailing, herding, and day to day movements increases.

4) Reference Conditions:

Information gathered from longtime residents has alluded to the increased haziness in the area. Clear vistas were the norm, and being able to see over 100 miles from a high point was an everyday occurrence. At this time, most information is anecdotal since there is very little documentation. Possible causes of this long-term reduction in air quality could be the increased mineral development and associated powerplants to the west that contribute air pollutants. Days that have clear skies are relatively rare.

Historic livestock use tended to be much heavier and for longer periods of time that increased bare ground and decreased plant cover. Large bands of sheep trailed back and forth across the field office, and dust from their movements could be seen for miles.

5) Synthesis and Interpretation:

Current mitigation standards in oil and gas development address new road construction and adequate surfacing. However, many of the existing roads have not been addressed. Vehicular traffic related to increased development results in numerous trips through these areas by anything motorized ranging from ATVs, pickup trucks, semis, large seismic trucks, and miscellaneous heavy equipment. Vegetation along these roads has reduced vigor and production and is generally covered in dust particles. Although gravel on the new roads has reduced some dust problems, even they are not exempt. Winter snows observed from the air show telltale signs of particulate movement along the drift side.

Catastrophic wildfires throughout the West are a problem beyond the scope of this document. Forest fires both regionally and locally could continue to have a significant impact on the area's air quality. Continued efforts to address this widespread problem are being implemented on a national basis, however, in the short-term there will continue to be large-scale wildfires. On the local level, creating fuel breaks and diversifying vegetation communities will help to ensure that wildfires in this area do not become catastrophic in scope.

Best management practices for livestock grazing will continue to reduce particulate pollution caused by this use. Reducing the size of disturbed areas, reestablishing vegetation on disturbed sites, and managing livestock to reduce bare ground will reduce soils susceptible to wind erosion (dust) .

6) Recommendations:

Within this assessment area there is no air quality criteria pollutant non-attainment areas for either state or federal standards as determined by the Wyoming DEQ. Due to prevailing winds, limited pollution within the general area, overall air quality meets this Standard.

Continue to implement mitigation measures on new oil and gas development operations, while attempting to resolve existing issues. Dust abatement due to vehicle traffic is an important concern, both on a resource basis and a public safety basis.

Continue prescribed burning and other vegetation treatment operations to provide for fuel breaks to ensure catastrophic wildfires do not occur. Treatments will greatly reduce the risk of large amounts of particulate matter in the air from local wildfires burning out of control.